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ABSTRACT

The taxonomy of the functions of dental x-ray technologists presented in this report resulted from a dental radiography curriculum development project undertaken at Middlesex County College (MCC) in 1981. After an introductory section citing arguments for creating taxonomies of objectives, the report explains the impetus for the curriculum development project in a New Jersey state law requiring the completion of a 40-hour course in dental radiography as a prerequisite to state licensure. The following section considers the development of the taxonomy, whereby the DACUM process, which relies upon experts employed on the job, was used to identify job requirements through job analysis. The complete taxonomy is then presented. The taxonomy consists of 11 major duties, each consisting of 2 or more tasks, and each task consisting of 2 or more steps. The major duties are practicing legal limitations for dental x-ray technologists; exposing various types of radiographs (i.e., paralleling, bisecting, intraoral occlusal, extraoral occlusal, panoramic, cephalometric, and lateral jaw radiographs); processing radiographs; completing patient records; and obtaining a state license. The paper concludes by explaining how the taxonomy has been translated into a curriculum guide which uses the duties to specify course goals, the tasks to specify unit goals, and the steps to specify lesson-level behavioral objectives. (DAB)

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A Taxonomy of Functions of
Dental X-ray Technologists*

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Benjamin S. Bloom in the 1956 publication Taxonomy of Educational Objectives: The Classification of Educational Goals stated, "The major purpose in constructing a taxonomy . . . is to facilitate communication."¹ Historically there have been three branches of taxonomies, i.e. the evolutionary taxonomy as a classification system based on observable differences and similarities of organisms; the phenetics branch focusing on species observable similarities; and the cladistics which is a classification based on branching within an order of species. There is also a fourth branch, that is, the classification of "doing." This fourth classification is a systematic ordering of the sets of performance categories of people. The generic definition is

*The operational definition of a dental x-ray technologist defined for this curriculum project is: A dental x-ray technologist is an individual who is trained by formal education and licensed by examination pursuant to Chapter 295--Laws of New Jersey, 1981, to perform under the direct supervision of a dentist the procedures and duties of exposing and processing radiographs.

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that a taxonomy is a systematic classification of people, things, or data.

Kan Yagi, et al. in 1971 wrote:

Essentially the arguments for a taxonomy are that it provides a common language for communication among the educationalists, provides for the precise definitions of terms, and is based on a logical ordering. It has, however, become much more than that because it provides the schools with a way to (a) evaluate what they are doing, and (b) potentially organize the curriculum in some systematic fashion, based on the taxonomic hierarchy itself.²

The authors of this article agreed with Bloom and Yagi and have produced a taxonomy which hopefully will aid instructors concerned with the education of dental auxiliaries who will be exposing and processing radiographs.

Curriculum Development Project Justification

In 1981, Middlesex County College, Edison, New Jersey, received a grant (funded under Section 133 of Public Law 94-482) from the New Jersey Department of Education, Division of Vocational Education and Career Preparation to develop a dental radiography curriculum.³ The justification for this grant was partially based upon the Radiologic Technology Board of Examiners having mandated the implementation of the Radiologic Technologist Act, Public Law 1981, Chapter 295. This law requires all applicants to complete a course in dental radiography as a prerequisite to the state licensing examination. The dental radiography course requirement consists of 40 hours of instruction to be divided into 25 clock hours of didactic instruction and 15

clock hours of clinical experience. Didactic hours and clinical hours must be taught by qualified personnel (dentists, registered dental hygienists, certified dental assistants licensed in dental radiography, or individuals who possess a valid license in dental radiography). The New Jersey Department of Environmental Protection implemented this law as of July 1, 1982. With over 1000 applicants annually taking the N. J. State licensing examination and 37 programs/courses being offered in the State, in 1981, a thorough identification of the requirements for the dental x-ray technologist job upon which to base curriculum and licensing examinations seemed vital.

Development of the Taxonomy

The development of the taxonomy* of functions of the dental x-ray technologist was accomplished using the DACUM process.^{4.5} DACUM means developing a curriculum. The main advantage of DACUM is that this strategy relies on experts employed on the job to determine curriculum content. Teacher bias in determining content is, therefore, eliminated.

*The second phase of the project consisted of developing a competency-based curriculum guide utilizing the results of the job analysis obtained through the DACUM process. The guide is presently (1982-83) being field tested in New Jersey.

DACUM is a process of job analysis which results in identifying the requirements of a job. These requirements, i.e., duties, tasks, and steps, become the basis for instruction in a program or course. DACUM analysis involves the following:

1. Only observable behavior ("ing" or doing) is specified. Knowledge or content specification is not generally specified unless it contains an "ing" or doing component.
2. The analysis is conducted by a person trained to conduct DACUM to aid practitioners in identifying what they do on the job. Teachers are not involved in the DACUM process.
3. The analysis results in a systematic classification of the duties, tasks, and steps required in a job. That is, a taxonomy of the functions required for a job is created.

The Taxonomy

Before examining the taxonomy of functions of the dental x-ray technologist, it seems appropriate to examine the curriculum outline (Figure 1) that was endorsed by the New Jersey X-ray Technician Board of Examiners* on February 11, 1981. This outline is the familiar topical outline containing little substantive content, particularly where psychomotor activity is concerned. The Board evidently realized this problem and supported the curriculum project for which the taxonomy was developed.

The taxonomy of functions of the dental x-ray technologist (Figure 2) contains 11 major duties, e.g. 1. Practicing Legal Limitations for Dental X-Ray Technologist, 2. Exposing Paralleling Radiographs. Each duty consists of two or more tasks, e.g. 1.1 Attaining Licensing Prerequisites,

*Name changed on October 9, 1981 to Radiologic Technology Board of Examiners.

- I. History
 - A. Discovery
 - B. Pioneers
- II. Properties
 - A. Matter
 - B. Ionization
 - C. Electromagnetic spectrum
 - D. Wavelength
- III. Equipment
 - A. Unit
 - 1. Types
 - 2. Components
 - 3. Operation
 - 4. Care
 - B. Film
 - 1. Types
 - 2. Sizes
 - 3. Composition
 - 4. Uses
 - 5. Storage
- IV. Inverse Square Law - Shadow Casting
- V. Principles of Dental X-ray Production
 - A. Current
 - B. Voltage
 - C. Ampere
 - D. Time
 - E. Emission
- VI. Protection
 - A. Manufacturer provided
 - B. Operator techniques
 - C. Safety devices
- VII. Intraoral Techniques
 - A. Long cone - paralleling
 - B. Short cone - bisection
 - C. Comparison of techniques
 - D. Occlusal
 - E. Pedodontic
 - F. Edentulous
 - G. Special anatomical considerations
- VIII. Extraoral Techniques
 - A. Panoramic
 - B. Cephalometric
 - C. Lateral jaw
- IX. Darkroom
 - A. Physical considerations
 - B. Equipment
 - C. Solutions
 - D. Processing
- X. Mounting
- XI. Radiographic Interpretation
 - A. Anatomy and landmarks
 - B. Oral pathology
 - C. Pitfalls
- XII. Patient Management and Education

Figure 1. Dental radiography required curriculum outline.
 Endorsed by the N.J. X-ray Technician Board of Examiners
 February 11, 1981.

1. Practicing Legal Limitations for Dental X-ray Technologists

1.1 Attaining Licensing Prerequisites

- 1.1.1 Attaining age of 18
- 1.1.2 Attaining high school diploma or equivalent
- 1.1.3 Achieving good moral character
- 1.1.4 Completing approved dental radiography curriculum

1.2 Practicing Operating Limitations

- 1.2.1 Explaining history of x-radiation
- 1.2.2 Describing radiation physics
- 1.2.3 Limiting license to dental radiography
- 1.2.4 Using equipment under direction and supervision of licensed dentist

1.3 Suspending or Revoking License

- 1.3.1 Procuring license through fraud or deceit
- 1.3.2 Using radiologic technology in fraudulent or deceitful manner
- 1.3.3 Being convicted of a crime involving moral turpitude
- 1.3.4 Suffering from medical problems, disability or addiction
- 1.3.5 Aiding or abetting a person who is not licensed
- 1.3.6 Undertaking practice beyond scope of license
- 1.3.7 Impersonating licensed dental x-ray technologist
- 1.3.8 Engaging in radiologic activities under assumed name
- 1.3.9 Practicing without license
- 1.3.10 Applying radiation to a human without specific direction of duly licensed dentist
- 1.3.11 Interpreting radiograph to a member of the public
- 1.3.12 Using x-ray machine in an incompetent or negligent manner

1.4 Reinstating of License

- 1.4.1 Applying for current license within five-year period
- 1.4.2 Paying outstanding fees
- 1.4.3 Applying for reinstatement of license

Figure 2. Taxonomy of functions of dental x-ray technologist.

2. Exposing Paralleling Radiographs

2.1 Preparing Armamentarium

- 2.1.1 Inventorying armamentarium
- 2.1.2 Obtaining periapical film
- 2.1.3 Obtaining appropriate paralleling film holders

2.2 Maintaining Asepsis Chain

- 2.2.1 Washing hands
- 2.2.2 Disinfecting armamentarium before and after procedure
- 2.2.3 Wearing protective coverings

2.3 Interacting with Patient

- 2.3.1 Identifying patient, self
- 2.3.2 Assessing patient's overall appearance
- 2.3.3 Escorting patient to radiographic area
- 2.3.4 Assisting patient safely into dental chair
- 2.3.5 Explaining procedure to reassure patient
- 2.3.6 Removing and safeguarding patient's personal belongings

2.4 Reading Charts

- 2.4.1 Reviewing patient information
- 2.4.2 Confirming questionable orders
- 2.4.3 Suggesting beneficial changes

2.5 Practicing Safety Procedures

- 2.5.1 Monitoring self
- 2.5.2 Monitoring patient
- 2.5.3 Monitoring personnel
- 2.5.4 Maintaining armamentarium

2.6 Inspecting Oral Cavity

- 2.6.1 Determining if further asepsis is needed
- 2.6.2 Removing intraoral prosthesis

Figure 2--Continued

2.7 Implementing Procedure

- 2.7.1 Activating x-ray unit
- 2.7.2 Calibrating x-ray unit
- 2.7.3 Positioning patient
- 2.7.4 Placing film for maxillary exposures
- 2.7.5 Directing position indicating device
- 2.7.6 Placing film for mandibular exposures
- 2.7.7 Directing position indicating device
- 2.7.8 Reiterating patient instruction
- 2.7.9 Evaluating paralleling technique
- 2.7.10 Exposing film
- 2.7.11 Removing radiograph from oral cavity
- 2.7.12 Identifying radiograph

2.8 Terminating Procedure

- 2.8.1 Deactivating x-ray unit
- 2.8.2 Replacing armamentarium in safe, proper position
- 2.8.3 Returning all personal belongings to patient
- 2.8.4 Assisting patient safely out of dental chair
- 2.8.5 Escorting patient from radiographic area

3. Exposing Bisecting Radiographs

3.1 Preparing armamentarium

- 3.1.1 Inventorying armamentarium
- 3.1.2 Obtaining periapical film
- 3.1.3 Obtaining appropriate bisecting plane film holders

3.2 Maintaining Asepsis Chain

- 3.2.1 Washing hands
- 3.2.2 Disinfecting armamentarium before and after procedure
- 3.2.3 Wearing protective coverings

3.3 Interacting with Patient

- 3.3.1 Identifying patient, self
- 3.3.2 Assessing patient's overall appearance
- 3.3.3 Escorting patient to radiography area
- 3.3.4 Assisting patient safely into dental chair
- 3.3.5 Explaining procedure to reassure patient
- 3.3.6 Removing and safeguarding patient's personal belongings

Figure 2--Continued

3.4 Reading Charts

- 3.4.1 Reviewing patient information
- 3.4.2 Confirming questionable orders
- 3.4.3 Suggesting beneficial changes

3.5 Practicing Safety Procedures

- 3.5.1 Monitoring self
- 3.5.2 Monitoring patient
- 3.5.3 Monitoring personnel
- 3.5.4 Maintaining armamentarium

3.6 Inspecting Oral Cavity

- 3.6.1 Determining if further asepsis is needed
- 3.6.2 Removing intraoral prosthesis

3.7 Implementing Procedure

- 3.7.1 Activating x-ray unit
- 3.7.2 Calibrating x-ray unit
- 3.7.3 Positioning patient
- 3.7.4 Positioning film
- 3.7.5 Establishing vertical angulation
- 3.7.6 Establishing horizontal angulation
- 3.7.7 Directing position indicating device
- 3.7.8 Reiterating patient instruction
- 3.7.9 Evaluating bisecting technique
- 3.7.10 Exposing film
- 3.7.11 Removing radiograph from oral cavity
- 3.7.12 Identifying radiograph

3.8 Terminating Procedure

- 3.8.1 Deactivating x-ray unit
- 3.8.2 Replacing armamentarium in a safe, proper position
- 3.8.3 Returning all personal belongings to patient
- 3.8.4 Assisting patient safely out of dental chair
- 3.8.5 Escorting patient from radiographic area

4. Exposing Intraoral Occlusal Radiographs

4.1 Preparing Armamentarium

- 4.1.1 Inventorying armamentarium
- 4.1.2 Obtaining occlusal film

Figure 2--Continued

4.2 Maintaining Asepsis Chain

- 4.2.1 Washing hands
- 4.2.2 Disinfecting armamentarium before and after procedure
- 4.2.3 Wearing protective coverings

4.3 Interacting with Patient

- 4.3.1 Identifying patient, self
- 4.3.2 Assessing patient's overall appearance
- 4.3.3 Escorting patient to radiographic area
- 4.3.4 Assisting patient safely into dental chair
- 4.3.5 Explaining procedure to reassure patient
- 4.3.6 Removing and safeguarding patient's personal belongings

4.4 Reading Charts

- 4.4.1 Reviewing patient information
- 4.4.2 Confirming questionable orders
- 4.4.3 Suggesting beneficial changes

4.5 Practicing Safety Procedures

- 4.5.1 Monitoring self
- 4.5.2 Monitoring patient
- 4.5.3 Monitoring personnel
- 4.5.4 Maintaining armamentarium

4.6 Inspecting Oral Cavity

- 4.6.1 Determining if further asepsis is needed
- 4.6.2 Removing intraoral prosthesis

4.7 Implementing Procedure

- 4.7.1 Activating x-ray unit
- 4.7.2 Calibrating x-ray unit
- 4.7.3 Positioning patient for maxillary exposure
- 4.7.4 Placing occlusal film for maxillary intraoral exposure
- 4.7.5 Directing position indicating device for maxillary exposure
- 4.7.6 Positioning patient for mandibular exposure
- 4.7.7 Placing occlusal film for mandibular intraoral exposure
- 4.7.8 Directing position indicating device for mandibular exposure

Figure 2--Continued

- 4.7.9 Reiterating patient instruction
- 4.7.10 Evaluating intraoral occlusal technique
- 4.7.11 Exposing occlusal film
- 4.7.12 Removing radiograph from oral cavity
- 4.7.13 Identifying radiograph
- 4.8 Terminating Procedure
 - 4.8.1 Deactivating x-ray unit
 - 4.8.2 Replacing armamentarium in safe, proper position
 - 4.8.3 Returning all personal belongings to patient
 - 4.8.4 Assisting patient safely out of dental chair
 - 4.8.5 Escorting patient from radiographic area
- 5. Exposing Occlusal Size Radiographs Extraorally
 - 5.1 Preparing Armamentarium
 - 5.1.1 Inventorying armamentarium
 - 5.1.2 Obtaining occlusal film
 - 5.1.3 Identifying and marking film
 - 5.2 Maintaining Asepsis Chain
 - 5.2.1 Washing hands
 - 5.2.2 Disinfecting armamentarium before and after procedure
 - 5.2.3 Wearing protective coverings
 - 5.3 Interacting with Patient
 - 5.3.1 Identifying patient, self
 - 5.3.2 Assessing patient's overall appearance
 - 5.3.3 Escorting patient to radiographic area
 - 5.3.4 Assisting patient safely into dental chair
 - 5.3.5 Explaining procedure to reassure patient
 - 5.3.6 Removing and safeguarding patient's personal belongings
 - 5.4 Reading Charts
 - 5.4.1 Reviewing patient information
 - 5.4.2 Confirming questionable orders
 - 5.4.3 Suggesting beneficial changes

Figure 2--Continued

5.5 Practicing Safety Procedures

- 5.5.1 Monitoring self
- 5.5.2 Monitoring patient
- 5.5.3 Monitoring personnel
- 5.5.4 Maintaining armamentarium

5.6 Inspecting Oral Cavity

- 5.6.1 Determining if further asepsis is needed
- 5.6.2 Removing intraoral prosthesis

5.7 Implementing Procedure

- 5.7.1 Activating x-ray unit
- 5.7.2 Calibrating x-ray unit
- 5.7.3 Positioning patient for maxillary exposure
- 5.7.4 Placing occlusal film for maxillary exposure
- 5.7.5 Directing position indicating device for maxillary exposure
- 5.7.6 Positioning patient for mandibular exposure
- 5.7.7 Placing occlusal film for mandibular exposure
- 5.7.8 Directing position indicating device for mandibular exposure
- 5.7.9 Reiterating patient instruction
- 5.7.10 Evaluating extraoral occlusal technique
- 5.7.11 Exposing occlusal film
- 5.7.12 Identifying radiograph

5.8 Terminating procedure

- 5.8.1 Deactivating x-ray unit
- 5.8.2 Replacing armamentarium in safe, proper position
- 5.8.3 Returning all personal belongings to patient
- 5.8.4 Assisting patient safely out of dental chair
- 5.8.5 Escorting patient from radiographic area

6. Exposing Panographic Radiograph

6.1 Preparing Armamentarium

- 6.1.1 Inventorying armamentarium
- 6.1.2 Selecting correct film and cassette
- 6.1.3 Utilizing correct darkroom lighting
- 6.1.4 Placing and securing film properly in cassette
- 6.1.5 Identifying and marking cassette
- 6.1.6 Placing cassette in x-ray unit

Figure 2--Continued

6.2 Maintaining Asepsis Chain

- 6.2.1 Washing hands
- 6.2.2 Disinfecting armamentarium before and after procedure
- 6.2.3 Wearing protective coverings

6.3 Interacting with Patient

- 6.3.1 Identifying patient, self
- 6.3.2 Assessing patient's overall appearance
- 6.3.3 Escorting patient to radiographic area
- 6.3.4 Assisting patient safely into dental chair
- 6.3.5 Explaining procedure to reassure patient
- 6.3.6 Removing and safeguarding patient's personal belongings

6.4 Reading Charts

- 6.4.1 Reviewing patient information
- 6.4.2 Confirming questionable orders
- 6.4.3 Suggesting beneficial changes

6.5 Practicing Safety Procedures

- 6.5.1 Monitoring self
- 6.5.2 Monitoring patient
- 6.5.3 Monitoring personnel
- 6.5.4 Maintaining armamentarium

6.6 Inspecting Oral Cavity

- 6.6.1 Determining if further asepsis is needed
- 6.6.2 Removing intraoral prosthesis

6.7 Implementing Procedure

- 6.7.1 Activating x-ray unit
- 6.7.2 Positioning patient
- 6.7.3 Head positioning
- 6.7.4 Calibrating machine according to jaw measurements
- 6.7.5 Reiterating patient instruction
- 6.7.6 Evaluating panographic technique
- 6.7.7 Exposing panographic film
- 6.7.8 Removing cassette

Figure 2--Continued

6.8 Terminating Procedure

- 6.8.1 Deactivating x-ray unit
- 6.8.2 Replacing the armamentarium in safe, proper position
- 6.8.3 Returning all personal belongings to patient
- 6.8.4 Assisting patient safely out of dental chair
- 6.8.5 Escorting patient from radiographic area

7. Exposing Cephalometric Radiograph

7.1 Preparing Armamentarium

- 7.1.1 Inventorying armamentarium
- 7.1.2 Selecting correct film and cassette
- 7.1.3 Utilizing correct darkroom lighting
- 7.1.4 Placing and securing film properly in cassette
- 7.1.5 Identifying and marking cassette
- 7.1.6 Placing cassette

7.2 Maintaining Asepsis Chain

- 7.2.1 Washing hands
- 7.2.2 Disinfecting armamentarium before and after procedure
- 7.2.3 Wearing protective coverings

7.3 Interacting with Patient

- 7.3.1 Identifying patient, self
- 7.3.2 Assessing patient's overall appearance
- 7.3.3 Escorting patient to radiographic area
- 7.3.4 Assisting patient safely into dental chair
- 7.3.5 Explaining procedure to reassure patient
- 7.3.6 Removing and safeguarding patient's personal belongings

7.4 Reading Charts

- 7.4.1 Reviewing patient information
- 7.4.2 Confirming questionable orders
- 7.4.3 Suggesting beneficial changes

7.5 Practicing Safety Procedures

- 7.5.1 Monitoring self
- 7.5.2 Monitoring patient
- 7.5.3 Monitoring personnel
- 7.5.4 Maintaining armamentarium

Figure 2--Continued

7.6 Inspecting Oral Cavity

- 7.6.1 Determining if further asepsis is needed
- 7.6.2 Removing intraoral prosthesis

7.7 Implementing Procedure

- 7.7.1 Activating x-ray unit
- 7.7.2 Calibrating x-ray unit
- 7.7.3 Positioning patient
- 7.7.4 Evaluating correct occlusal relationship
- 7.7.5 Directing position indicating device
- 7.7.6 Reiterating patient instruction
- 7.7.7 Evaluating the cephalometric technique
- 7.7.8 Exposing cephalometric film
- 7.7.9 Removing cassette

7.8 Terminating Procedure

- 7.8.1 Deactivating x-ray unit
- 7.8.2 Replacing armamentarium in safe, proper position
- 7.8.3 Returning all personal belongings to patient
- 7.8.4 Assisting patient safely out of dental chair
- 7.8.5 Escorting patient from radiographic area

8. Exposing Lateral Jaw Radiograph**8.1 Preparing armamentarium**

- 8.1.1 Inventorying armamentarium
- 8.1.2 Selecting correct film and cassette
- 8.1.3 Utilizing correct darkroom lighting
- 8.1.4 Placing and securing film properly in cassette
- 8.1.5 Identifying and marking cassette
- 8.1.6 Placing cassette

8.2 Maintaining Asepsis Chain

- 8.2.1 Washing hands
- 8.2.2 Disinfecting armamentarium before and after procedure
- 8.2.3 Wearing protective coverings

Figure 2--Continued

8.3 Interacting with Patient

- 8.3.1 Identifying patient, self
- 8.3.2 Assessing patient's overall appearance
- 8.3.3 Escorting patient to radiographic area
- 8.3.4 Assisting patient safely into dental chair
- 8.3.5 Explaining procedure to reassure patient
- 8.3.6 Removing and safeguarding patient's personal belongings

8.4 Reading Charts

- 8.4.1 Reviewing patient information
- 8.4.2 Confirming questionable orders
- 8.4.3 Suggesting beneficial changes

8.5 Practicing Safety Procedures

- 8.5.1 Monitoring self
- 8.5.2 Monitoring patient
- 8.5.3 Monitoring personnel
- 8.5.4 Maintaining armamentarium

8.6 Inspecting Oral Cavity

- 8.6.1 Determining if further asepsis is needed
- 8.6.2 Removing intraoral prosthesis

8.7 Implementing Procedure

- 8.7.1 Activating x-ray unit
- 8.7.2 Calibrating x-ray unit
- 8.7.3 Positioning patient
- 8.7.4 Evaluating correct occlusal relationship
- 8.7.5 Directing position indicating device
- 8.7.6 Reiterating patient instruction
- 8.7.7 Exposing right lateral film
- 8.7.8 Repositioning lead markers
- 8.7.9 Repositioning patient
- 8.7.10 Redirecting position indicating device
- 8.7.11 Evaluating lateral jaw technique
- 8.7.12 Exposing left lateral film
- 8.7.13 Removing cassette

Figure 2--Continued

8.8 Terminating Procedure

- 8.8.1 Deactivating x-ray unit
- 8.8.2 Replacing armamentarium in safe, proper position
- 8.8.3 Returning all personal belongings to patient
- 8.8.4 Assisting patient safely out of dental chair
- 8.8.5 Escorting patient from radiographic area

9. Processing Radiographs

9.1 Selecting Manual/Automatic Technique

- 9.1.1 Identifying type radiograph to be processed
- 9.1.2 Evaluating processing equipment
- 9.1.3 Determining processing technique

9.2 Preparing Armamentarium

- 9.2.1 Preparing work area
- 9.2.2 Preparing solutions
- 9.2.3 Maintaining solutions
- 9.2.4 Labeling radiograph for processing
- 9.2.5 Making light safe

9.3 Implementing Processing Procedure

- 9.3.1 Preparing radiograph
- 9.3.2 Placing radiograph into solutions
 - 9.3.2.1 Time-temperature
 - 9.3.2.2 Rapid
 - 9.3.2.3 Wet
 - 9.3.2.4 Sight
 - 9.3.2.5 Automatic
- 9.3.3 Retrieving radiograph
- 9.3.4 Drying radiograph

9.4 Duplicating Radiographs

- 9.4.1 Preparing armamentarium
- 9.4.2 Selecting duplicating film
- 9.4.3 Reproducing radiographs

9.5 Evaluating Processed Radiographs

- 9.5.1 Evaluating exposing procedure
- 9.5.2 Evaluating processing procedure

Figure 2--Continued

10. Completing Patient Records

10.1 Recording all Pertinent Information on Patient's Chart

10.2 Mounting Radiographs

- 10.2.1 Washing hands and preparing work area prior to mounting
- 10.2.2 Arranging identification dots
- 10.2.3 Sorting radiographs
- 10.2.4 Placing radiographs in correct position in mount

10.3 Labeling Radiographs

- 10.3.1 Recording all pertinent information on radiographic mount and envelope
- 10.3.2 Marking radiographic mount, identifying left and right side of patient

10.4 Filing Radiographs in Patient's Chart

- 10.4.1 Placing radiographs in protective covering
- 10.4.2 Updating radiographic file

10.5 Mailing Radiographs

- 10.5.1 Preparing radiographs for mailing
- 10.5.2 Sending radiographs by registered mail
- 10.5.3 Maintaining, in file, all pertinent information used in transmittal of radiographs

11. Obtaining State License

11.1 Completing Application Form for State Radiographic Examination

- 11.1.1 Completing personal data portion of application
- 11.1.2 Applying for certification
- 11.1.3 Certifying education
- 11.1.4 Establishing moral character
- 11.1.5 Declaring truth of statements
- 11.1.6 Completing applications

Figure 2--Continued

11.2 Taking State Radiographic Licensing Examination

- 11.2.1 Reporting to designated test center**
- 11.2.2 Providing identification**
- 11.2.3 Completing examination**
- 11.2.4 Reapplying for examination if applicant has not
successfully passed examination**
- 11.2.5 Renewing license**

1.2 Practicing Operating Limitations. Each task has two or more steps, e.g., 2.1.1 Inventorying armamentarium, 2.1.2 Obtaining periapical film.

The taxonomy can be translated into a curriculum by using the duties (one digit) to specify course goals. The tasks (two digits) can be written as unit goals and the steps (three digits) can be developed into lesson level behavioral objectives specifying 1) the exact behavior expected of the student upon completion of the lesson, 2) the conditions under which the student is expected to perform the behavior, and 3) the level of performance when the student will recognize successful performance.

Summary

A taxonomy is a systematic classification of people, data, or things. At least four taxonomic branches (systems) exist. The taxonomic branch most appropriate for the psychomotor domain involves the systematic classification of duties, tasks and steps required in the performance of a human activity. When a job analysis technique such as DACUM is applied to a particular job a taxonomy of the functions of that job can be developed. One result of the curriculum project at Middlesex County College, Edison, New Jersey was a taxonomy of functions of dental x-ray technologist. This taxonomy has been translated into a curriculum guide and is being field tested.

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